

112.3 - Glasses (powder and solid forms)

Technical Contact: [william.c.davis@nist.gov](mailto:wiliam.c.davis@nist.gov)

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

SRM	81a	89	92	93a	165a	620	621	1411	1412	1413	1830	1831
Description	Glass Sand	Glass, Lead Barium	Low-Boron, Soda-Lime Powder	High-Boron Borosilicate	Glass Sand (Low Iron)	Soda Lime, Flat	Soda-Lime Container	Soft Borosilicate Glass	Multicomponent Glass	Glass Sand (High Alumina)	Soda Lime Float Glass	Soda Lime Sheet Glass
Unit Size	(75 g)	(45 g)	(45 g)	(wafer)	(75 g)	(set (3))	(set (3))	(set (10))	(set (8))	(75 g)	(3 platelets)	(3 platelets)

(Concentrations are in mass fractions, in %, unless noted by an asterisk for mg/kg)

Component	SiO ₂	65.35	(75.0)	80.8	72.08	71.13	58.04	42.38	82.77	73.07	73.08	
PbO		17.50							4.40			
Al ₂ O ₃	0.66	0.18		2.28	0.059	1.80	2.76	5.68	7.52	9.90	0.12	1.21
FeO				0.016						0.032	0.025	
Fe ₂ O ₃	0.082	0.049?		0.028	0.012	0.043?	0.040?	0.050	(0.031)	0.24	0.121	0.087
ZnO			(0.2)					3.85	4.48			
CdO									4.38			
MnO		0.088										
Mn ₂ O ₃												
TiO ₂	0.12	0.01		0.014	0.011	0.018	0.014	0.02		0.011	0.019	
ZrO ₂	0.034	0.005		0.042?	0.006		0.007					
CaO		0.21	(8.3)	0.01		7.11	10.71	2.18	4.53	0.74	8.56	8.20
BaO		1.40					0.12	5.00	4.67	0.12		

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Li ₂ O								(4.50)				
MgO	0.03	(0.1)	0.005		3.69	0.27	0.33	(4.69)	0.06	3.90	3.51	
K ₂ O	8.40	(0.6)	0.014		0.41	2.01	2.97	4.14	3.94	0.04	0.33	
Na ₂ O	5.70	(13.1)	3.98		14.39	12.74	10.14	4.69	1.75	13.75	13.32	

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1834 2696

Fused
Ore Silica
(Glass) Fume
(disk) (70 g)

Si 20.19 95.61

Al 20.71 0.2080

Fe (0.005)
0.32?

0.051

0.0299

Ti 1.11

Zr
(0.047)

Ca 0.426
0.095

Ba
0.062

1834 2696

Fused
Ore Silica
(Glass) Fume
(disk) (70 g)

Li (4.6)

Mg 0.235
0.088

K 0.42 0.655

Na (0.129)
(0.14)

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B ₂ O ₃	0.70	12.56		10.94	4.53	
P ₂ O ₅	0.23					
As ₂ O ₅	0.36					
As ₂ O ₃	0.03		0.056	0.030		
S ₂ O ₃	0.03		0.28	0.13		0.26
Cl	0.05	0.060				0.25
Cr						
SrO				0.09	4.55	
F						
Cr ₂ O ₃	46*		(1*)			
Loss on Ignition	0.32	(0.42)				

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B (1.1)

P 0.152 (0.0863)

(0.02)

Sr 0.153

(2.114)

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